Sélection d'articles en didactique de la chimie

🔧 Fix Me! à ajouter :

- https://dvillers.umons.ac.be/wiki/teaching:biblio-10.1021-ed2001957

Liens rapides :

- **http://pubs.acs.org/toc/jceda8/current : numéro courant de Journal of Chemical Education** où vous avez la possibilité de consulter les résumés. Si vous souhaitez recevoir la table des matières à chaque nouveau numéro, il vous suffit de prendre l'option “register” (https://account.acs.org/ssoamweb/account/signUp), et ensuite de demander les “E-Mail Alerts” pour les journaux choisis. Pour les étudiants et le personnel UMONS, vous pouvez accéder aux textes complets sur le réseau de l'UMONS ou en activant le VPN, ou via le bureau à distance.
    - Fil RSS des derniers articles parus dans Journal of Chemical Education
- **Chemistry Education Research and Practice : journal de la Royal Society of Chemistry**, accessible sur inscription. Vous pouvez obtenir des alertes via la page http://www.rsc.org/Publishing/Journals/forms/V5profile.asp, ainsi que pour Education in chemistry.
    - Fil RSS des derniers articles parus dans Chemistry Education Research and Practice
- The Chemical Educator - table of contents
- Publications intéressantes (résumés) (sélections d'articles discutés lors de séminaires internes, sur ce wiki)
- Publications intéressantes de chimie-physique, pour travaux personnels d'étudiants,…

> Dans les listes qui suivent, certains articles concernent l'enseignement supérieur et présentent donc un intérêt relatif par rapport au secondaire.

Articles de Journal of Chemical Education

ASAP and/or ACS Editors Choice articles

- …

Virtual Issues

- Journal of Chemical Education - Resources for Teaching Your Chemistry Class Online: A Free to Read Collection from the American Chemical Society & the ACS Division of Chemical Education
- Laboratory Learning
- Introducing the Virtual Issue: George M. Bodner Festschrift Marcy Towns, 2021 → sélection

d'articles sur :
    - Constructivism as a Lens for Understanding Student Learning
    - Student Conceptualization of Organic Reactions
    - Understanding Student Approaches to Problem Solving
    - Visualization and Spatial Reasoning Skills in Chemistry Education
    - Conceptual Understanding of Chemistry

Cf. aussi le lien virtual collections.

2022

- Journal of Chemical Education | Vol 99, No 3
    - Gamified Virtual Laboratory Experience for In-Person and Distance Students
    - The Case Study Method in Chemistry Teaching: A Systematic Review
    - Compounds and Molecules: Learning How to Distinguish Them through an Educational Game
    - Does Virtual Titration Experiment Meet Students' Expectation? Inside Out from Indian Context
    - Future of the Flipped Classroom in Chemistry Education: Recognizing the Value of Independent Preclass Learning and Promoting Deeper Understanding of Chemical Ways of Thinking During In-Person Instruction
- Journal of Chemical Education | Vol 99, No 2
    - Using the Recycled Parts of a Computer DVD Drive for Fabrication of a Low-Cost Arduino-Based Syringe Pump
    - New Software Application and Case Study That Simplify Teaching Complex Chemical Solubility and Equilibria
    - Mobile Augmented Reality Laboratory for Learning Acid–Base Titration
    - The Open-Response Chemistry Cognitive Assistance Tutor System: Development and Implementation
    - Implementation of Inquiry-Based Science in the Classroom and Its Repercussion on the Motivation to Learn Chemistry
    - Using the Schoolyard as a Setting for Learning Chemistry: A Sociocultural Analysis of Pre-service Teachers' Talk about Redox Chemistry
    - Assessment of Practical and Scientific Writing Skills for Pre-University Students through Project-Based Learning
    - Animated Electrochemistry Simulation Modules
    - Virtual Reality Assisted General Education of Nuclear Chemistry and Radiochemistry
    - Digital Tool for the Analysis of UV–Vis Spectra of Olive Oils and Educational Activities with High School and Undergraduate Students
    - LabPi: A Digital Measuring Station for STEM Education 4.0
    - Adsorption of Additives in Cola Beverages: A Safe and Improved Experiment Exploring Beer's Law and Adsorption Process
    - Thirst for a Solution: Alginate Biopolymer Experiments for the Middle and High School Classroom
    - CHEMTrans: Playing an Interactive Board Game of Chemical Reaction Aeroplane Chess
    - At-Home Microscale Paper-Based Quantitative Analysis Activity with External Standards
    - Chemist Bot as a Helpful Personal Online Training Tool for the Final Chemistry Examination
    - The Thalidomide Mystery: A Digital Escape Room Using Genially and WhatsApp for High

School Students

- Journal of Chemical Education | Vol 99, No 1 - Special Issue on Diversity, Equity, Inclusion, and Respect in Chemistry Education Research and Practice
    - Investigating the Impact of Assessment Practices on the Performance of Students Perceived to Be at Risk of Failure in Second-Semester General Chemistry Lisa Shah, Adan Fatima, Ahmad Syed, and Eric Glasser, J. Chem. Educ. 2022, 99, 1, 14–24 DOI: 10.1021/acs.jchemed.0c01463

2021

- Journal of Chemical Education | Vol 98, No 12
    - Valence Bond and Molecular Orbital: Two Powerful Theories that Nicely Complement One Another
    - Exploring Variation in Ways of Thinking About and Acting to Control a Chemical Reaction
    - A Program-Level Assessment of Student Understanding of Bonding in the Chemistry Major
    - An Integrated Database of Common Chemicals and Chemistry Demonstrations and Student Experiments Used in Hungary
    - Microscale Educational Kits for Learning Chemistry at Home
    - Using NCBI Entrez Direct (EDirect) for Small Molecule Chemical Information Searching in a Unix Terminal
    - How Many Bubbles Are in the Foam Produced during the Candy-Cola Soda Geyser?
    - Finding the pKa Values of a Double-Range Indicator Thymol Blue in a Remote Learning Activity
    - Should We Ban Single-Use Plastics? A Role-Playing Game to Argue and Make Decisions in a Grade-8 School Chemistry Class
    - Using Sodium Hydrogen Carbonate to Teach Chemical Concepts of Thermodynamics
    - Examining the Aufbau Principle and Ionization Energies: A Computational Chemistry Exercise for the Introductory Level
    - Computer Vision in Chemistry: Automatic Titration
    - Another Useful Film Clip: Scientific Methodology of the Frankenstein Monster
- Journal of Chemical Education | Vol 98, No 11
    - Pedagogical Reform in an Introductory Chemistry Course and the Importance of Curricular Alignment (undergraduate)
    - Exemplar Case Studies Demonstrating Why Future Pharmacists Need to Learn Medicinal and Analytical Chemistry (pharma)
- Journal of Chemical Education - Vol 98, No 10
    - What Role May Intuitive Concepts about Chemical Ideas Play When Students Take Timed Tests?
    - Game-Based Learning and Just-in-Time Teaching to Address Misconceptions and Improve Safety and Learning in Laboratory Activities
    - Using a Modular Approach to Introduce Python Coding to Support Existing Course Learning Outcomes in a Lower Division Analytical Chemistry Course
    - Implementation of a Python Program to Simulate Sampling
    - Diffusion of Gases into Air: A Simple Small-Scale Laboratory Activity
    - Using an Infrared Camera to Visualize a Simple Demonstration of Changing the Internal Energy of a System
- Journal of Chemical Education - Vol 98, No 9
    - Exploring Sustainability Metrics in General Chemistry Using Intensive and Extensive Properties of Matter
    - Encouraging Biochemistry Students’ Metacognition: Reflecting on How Another Student

  - Might Not Carefully Reflect
  - Investigating How Teachers' Formative Assessment Practices Change Across a Year
  - Teaching Chemistry by a Creative Approach: Adapting a Teachers' Course for Active Remote Learning
  - A Gentle Introduction to Machine Learning for Chemists: An Undergraduate Workshop Using Python Notebooks for Visualization, Data Processing, Analysis, and Modeling
  - SIR (Susceptible–Infectious–Removed) Model of Epidemiology as an Extended Example for Chemical Kinetics Students
  - An Interdisciplinary-Complementary Chemical Approach to Effective Evaluation in Undergraduate Laboratory Experiments
  - Library of 3D Visual Teaching Tools for the Chemistry Classroom Accessible via Sketchfab and Viewable in Augmented Reality
- Journal of Chemical Education - Vol 98, No 8
  - LAB Theory, HLAB Pedagogy, and Review of Laboratory Learning in Chemistry during the COVID-19 Pandemic
  - Electronic Entropy as a Periodic Property of the Elements: A Theoretical Chemistry Approach
  - An Inexpensive 3D-Printable Do-It-Yourself Visible Spectrophotometer for Online, Hybrid, and Classroom-Based Learning
  - At-Home Titration: Magnesium Hydroxide in Milk of Magnesia Using an Inexpensive Digital Balance and Natural Food Dye as Indicators
  - Glowing-in-the-Screen: Teaching Fluorescence with a Homemade Accessible Setup
- Journal of Chemical Education - Vol 98, No 7
  - Improving Learning Outcomes and Metacognitive Monitoring: Replacing Traditional Textbook Readings with Question-Embedded Videos
  - Do Social Chemophobic Attitudes Influence the Opinions of Secondary School Students?
  - Assessment of Technological Setup for Teaching Real-Time and Recorded Laboratories for Online Learning: Implications for the Return to In-Person Learning
  - Conversation among Physical Chemists: Strategies and Resources for Remote Teaching and Learning Catalyzed by a Global Pandemic
  - MoleculARweb: A Web Site for Chemistry and Structural Biology Education through Interactive Augmented Reality out of the Box in Commodity Devices
  - Calculating Soft-Sphere Ionic Radii for Solid-State Arrangements from Solution Measurements
  - Introducing Undergraduates to Primary Research Literature
  - Interactive Lecture in Redox Chemistry: Analysis of the Impact of the Dissemination of University Scientific Research among High School Students
  - Educational Videogame to Learn the Periodic Table: Design Rationale and Lessons Learned
  - Escape from Quant Lab: Using Lab Skill Progression and a Final Project to Engage Students
  - Educational Escape Room: Break Dalton's Code and Escape!
  - Liquid–Liquid Demonstrations: Phase Equilibria and the Lever Rule
  - Liquid–Liquid Demonstrations: Critical Opalescence
  - Liquid–Liquid Demonstrations: Spinodal Decomposition
  - Integrating Artificial Intelligence to Chemistry Experiment: Carbon Dioxide Fountain
  - Inexpensive Alkaline Fuel Cell for Introductory Chemistry Classes
- Journal of Chemical Education - Vol 98, No 6
  - Mimicking Students' Behavior during a Titration Experiment: Designing a Digital Student-Centered Experimental Environment | Journal of Chemical Education

    - Designing and 3D Printing an Improved Method of Measuring Contact Angle in the Middle School Classroom | Journal of Chemical Education
    - Polysketch Pen: Drawing from Materials Chemistry to Create Interactive Art and Sensors Using a Polyaniline Ink | Journal of Chemical Education
    - Exploring Chemical Kinetics at Home in Times of Pandemic: Following the Bleaching of Food Dye Allura Red Using a Smartphone | Journal of Chemical Education
    - Advantages and Disadvantages of Using the Answer-Until-Correct Multiple-Choice Test Format for a Class of Non-STEM Majors | Journal of Chemical Education
- Journal of Chemical Education - Vol 98, No 5
    - Combining Jigsaws, Rule-Based Learning, and Retrieval Practice Improves IUPAC Nomenclature Competence | Journal of Chemical Education
    - Using Classical Test Theory and Rasch Modeling to Improve General Chemistry Exams on a Per Instructor Basis| Journal of Chemical Education
    - Sample Plan for Easy, Inexpensive, Safe, and Relevant Hands-On, At-Home Wet Organic Chemistry Laboratory Activities | Journal of Chemical Education
    - “Ethics against Chemistry”: Solving a Crime Using Chemistry Concepts and Storytelling in a History of Science-Based Interactive Game for Middle School Students | Journal of Chemical Education
    - Formation of a Water Ball in a Water Bottle to Learn the Chemistry of Surfactants | Journal of Chemical Education
    - Using Classic Movie Chemistry Scenes to Introduce Classroom Activities | Journal of Chemical Education
- Journal of Chemical Education - Vol 98, No 4
    - Design, Implementation, and Evaluation of a Scientific Modeling Course on Concentration Cells | Journal of Chemical Education
    - Utilizing Unexpected Results in Water Electrolysis to Engage Students in Scientific Inquiry | Journal of Chemical Education
    - Tactile Models for the Visualization, Conceptualization, and Review of Intermolecular Forces in the College Chemistry Classroom | Journal of Chemical Education
    - Computational Chemistry Activities with Avogadro and ORCA | Journal of Chemical Education
    - Facile Method for Constructing Lewis (Electron Dot) Structures | Journal of Chemical Education
- Journal of Chemical Education - Vol 98, No 3
    - From Ideas to Items: A Primer on the Development of Ordered Multiple-Choice Items for Investigating the Progression of Learning in Higher Education STEM | Journal of Chemical Education
    - Use of Simulations and Screencasts to Increase Student Understanding of Energy Concepts in Bonding | Journal of Chemical Education
    - Let Students Choose: Examining the Impact of Open Educational Resources on Performance in General Chemistry | Journal of Chemical Education
    - Introducing High School Students to the Avogadro Number and the Mole Concept Using Discovery with Calculations Based on Physical Properties of Elements, Crystal Structures, and 28Si Spheres | Journal of Chemical Education
    - Connecting Chemistry to Mathematics by Establishing the Relationship between Conductivity and Concentration in an Interdisciplinary, Computer-Based Project for High School Chemistry Students | Journal of Chemical Education
    - From Passive Observers to Active Participants: Using Interactive Remote Demonstrations to Increase Student Involvement in Online Chemistry Instruction | Journal of Chemical Education
    - Using Pop-Culture to Engage Students in the Classroom | Journal of Chemical Education

    - Chemical Battleship: Discovering and Learning the Periodic Table Playing a Didactic and Strategic Board Game | Journal of Chemical Education
    - A Choose-Your-Own-Adventure-Style Virtual Lab Activity | Journal of Chemical Education
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    - MILAGE LEARN+: A Mobile Learning App to Aid the Students in the Study of Organic Chemistry | Journal of Chemical Education
    - At-Home Real-Life Sample Preparation and Colorimetric-Based Analysis: A Practical Experience outside the Laboratory | Journal of Chemical Education
    - Titrate over the Internet: An Open-Source Remote-Control Titration Unit for All Students | Journal of Chemical Education
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    - Dimensions of Variation in Chemistry Instructors’ Approaches to the Evaluation and Grading of Student Responses
    - Epistemological Profile of Chemical Bonding: Evaluation of Knowledge Construction in High School
    - Using Games to Build and Improve 10th Grade Students’ Understanding of the Concept of Chemical Bonding and the Representation of Molecules
    - What Is in a Prerequisite? An Observational Study on the Effect of General Chemistry on Organic Chemistry Performance
    - Teaching Cheminformatics through a Collaborative Intercollegiate Online Chemistry Course (OLCC)
    - Determining University Students’ Familiarity and Understanding of Laboratory Safety Knowledge—A Case Study
    - Modular Science Kit as a support platform for STEM learning in primary and secondary school
    - Exploring Chemistry with Wireless, PC-Less Portable Virtual Reality Laboratories
    - CheMakers: Playing a Collaborative Board Game to Understand Organic Chemistry
    - ChemistDice: A Game for Organic Functional Groups
    - Introducing Students to the Periodic Table Using a Descriptive Approach of Superheroes, Meats, and Fruits and Nuts
    - Discovering the Chemical Mechanism of Common Heating Agents: A Stepwise Inquiry with Student-Designed Experiments in a High School Laboratory Course
    - Building a Raspberry Pi Spectrophotometer for Undergraduate Chemistry Classes
    - From Abstract to Manipulatable: The Hybridization Explorer, A Digital Interactive for Studying Orbitals
    - 360° Virtual Laboratory Tour with Embedded Skills Videos
    - Clarity on Cronbach’s Alpha Use
    - A Creative Commons Textbook for Teaching Scientific Computing to Chemistry Students with Python and Jupyter Notebooks
    - Resuscitating the Mercury Beating Heart: An Improvement on the Classic Demo
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    - Safety Moments in Chemical Safety Education | Journal of Chemical Education
    - RAMP: A Safety Tool for Chemists and Chemistry Students | Journal of Chemical Education
    - Building Strong Cultures with Chemical Safety Education | Journal of Chemical Education
    - An Engaging and Fun Breakout Activity for Educators and Students about Laboratory Safety | Journal of Chemical Education
    - Reinterpreting Popular Demonstrations for Use in a Laboratory Safety Session That Engages Students in Observation, Prediction, Record Keeping, and Problem Solving |

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  - Open Digital Educational Resources for Self-Training Chemistry Lab Safety Rules | Journal of Chemical Education
  - Using Virtual Reality to Demonstrate Glove Hygiene in Introductory Chemistry Laboratories | Journal of Chemical Education
  - Developing Risk Assessment Competencies in Preservice K–12 Teachers | Journal of Chemical Education
  - Safe Handling of Gas Generating Experiments Using Disposable Plastic Syringes | Journal of Chemical Education

2020

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  - Will 2020 Be an Inflection Point in the Trajectory of Chemistry Teaching and Learning? | Journal of Chemical Education
  - Examining the Psychometric Properties of the Redox Concept Inventory: A Rasch Approach | Journal of Chemical Education
  - Analyzing Chemistry Teachers' Formative Assessment Practices Using Formative Assessment Portfolio Chapters Timothy N. Abell and Hannah Sevian, J. Chem. Educ. 2020, 97, 12, 4255–4267 DOI: 10.1021/acs.jchemed.0c00361
    - cf. Are you making the most of formative assessment? David Read, education in chemistry, RSC, 2021
  - Teaching an Introductory Organic Chemistry Class for High School Students | Journal of Chemical Education
  - Derivation of the Theoretical Minimum Energy of Separation of Desalination Processes | Journal of Chemical Education
  - Fun with Flags and Chemistry | Journal of Chemical Education
  - Race to the Reactor and Other Chemistry Games: Game-Based and Experiential Learning Experiences in Materials and Polymer Chemistry | Journal of Chemical Education
  - A Photographic Process Using Easily Available Reagents | Journal of Chemical Education
  - How Should Apples Be Prepared for a Fruit Salad? A Guided Inquiry Physical Chemistry Experiment | Journal of Chemical Education
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  - "The Chemistry of Poisons": An Interdisciplinary Approach to Integrating Chemical, Toxicological, and Medicinal Principles
  - Interactions 500: Design, Implementation, and Evaluation of a Hybrid Board Game for Aiding Students in the Review of Intermolecular Forces During the COVID-19 Pandemic
  - ChemEscape, Polymer Chemistry: Solving Interactive Puzzles Featuring Scaffolded Learning to Promote Student Understanding of Polymers and Structure–Property Relationships
  - Using Magnet-Embedded Silicone Balls to Construct Stable Models for Close-Packed Crystal Structures
  - All Roads Lead to Rome: Triple Stoichiometry with a Lithium Battery
  - Project-Based Experiment in a Physical Chemistry Teaching Laboratory: Ion Effects on

    - Caffeine Partitioning Thermodynamics
- Octobre - Journal of Chemical Education - Vol 97, No 10
    - Commentary on the Models of Electronegativity
    - Teachers' Noticing, Interpreting, and Acting on Students' Chemical Ideas in Written Work
    - Review to Analyze and Compare Virtual Chemistry Laboratories for Their Use in Education
    - Are Heating and Stirring Required to Dissolve Salt in Water? Answers from Quantitative Experimental Evidence
    - Creation of a Phenol/Water Phase Diagram Using a Low-Cost Automated System and Remote Transmission
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    - Experience-Based Learning Approach to Chemical Kinetics: Learning from the COVID-19 Pandemic
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    - Physical and Digital Educational Escape Room for Teaching Chemical Bonding] * [[https://pubs.acs.org/doi/10.1021/acs.jchemed.0c00739|A Course of History of Chemistry and Chemical Education Completely Delivered in Distance Education Mode during Epidemic COVID-19
    - Online Data Generation in Quantitative Analysis: Excel Spreadsheets and an Online HPLC Simulator Using a Jupyter Notebook on the Chem Compute Web site
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  - Stay at Home Laboratories for Chemistry Courses
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  - An Applied Research-Based Approach to Support Chemistry Teachers during the COVID-19 Pandemic
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  - Gamification of ChemDraw during the COVID-19 Pandemic: Investigating How a Serious, Educational-Game Tournament (Molecule Madness) Impacts Student Wellness and Organic Chemistry Skills while Distance Learning
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    - Ricin and Saxitoxin: Two Natural Products That Became Chemical Weapons
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    - A Proposed Integrated Framework for Chemical Safety and Chemical Security
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    - Interactive Unit Cell Visualization Tool for Crystal Lattice Structures
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  - Designing and Using an Atomic Model Kit with H, C, N, and O Model Atoms Having a Mass Ratio of 1:12:14:16 to Teach the Concept of Mole and Associated Stoichiometric Relationships
  - Interactive 3D Visualization of Chemical Structure Diagrams Embedded in Text to Aid Spatial Learning Process of Students
  - Platonic Solids and Their Programming: A Geometrical Approach
  - Constructing, Troubleshooting, and Using Absorption Colorimeters to Integrate Chemistry and Engineering
  - Curve Fitting, Linear Algebra, and Solver in an Analytical Chemistry Course: A Facile and Safe Activity Suitable for the Classroom Setting
  - Elephant’s Toothpaste Used as a Qualitative Demonstration of Rate versus Temperature
  - Phosphate in Soils: An Undergraduate Exploration of Soil Texture, Chemistry, and Amendment
  - Lab Cooked MOF for CO2 Capture: A Sustainable Solution to Waste Management
  - Low-Cost 3D-Printed Polarimeter
  - Data Functionalization for Gas Chromatography in Python
  - Leavening Agents: The Chemistry of Baking Discovered with a Computer-Based Learning
  - Changes of CO2 Concentration and Heat Illustrate Why the Flame Is Extinguished in the Candle-and-Cylinder Experiment
  - The Blue Bottle Experiment Revisited: How Much Oxygen?
  - Comment on “Should Organic Chemistry Be Taught as Science?”
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  - The Emerging Role of Prepublication in Chemistry Education
  - Analysis of Two Definitions of the Mole That Are in Simultaneous Use, and Their Surprising Consequences
  - Impact of Representations in Assessments on Student Performance and Equity
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  - Innovative Food Laboratory for a Chemistry of Food and Cooking Course
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    - That's So Cool. Using a Flame to Freeze Water. The Vapor-Absorption Refrigerator and How It Works
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    - Using Elementary Calculus and Dimensional Analysis to Prepare Students for Physical Chemistry
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    - AIRduino: On-Demand Atmospheric Secondary Organic Aerosol Measurements with a Mobile Arduino Multisensor
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- Articles
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  - Put Some Movie Wow! in Your Chemistry Teaching, Christopher A. Frey, Marjorie L. Mikasen, Mark A. Griep (DOI: 10.1021/ed300092t)
  - Synthesis and Study of Silver Nanoparticles, Lorraine Mulfinger, Sally D. Solomon, Mozghan Bahadory, Aravindan V. Jeyarajasingam, Susan A. Rutkowsky, Charles Boritz (DOI: 10.1021/ed084p322)
- Editorials
  - Share the Wonder, Deanna M. Cullen (DOI: 10.1021/ed300459v)
  - What We Do and Don't Know about Teaching and Learning Science: The National Research Council Weighs in on Discipline-Based Education Research, Norbert J. Pienta (DOI: 10.1021/ed300354t)
  - Cutting-Edge and Cross-Cutting: Connecting the Dots between Nanotechnology and High School Chemistry, Gregory T. Rushton, Brett A. Criswell (DOI: 10.1021/ed300531k)
- Commentary
  - JCE Classroom Activities Virtual Issue: Celebrating 15 Years with the 15 Greatest Hits, 1997-2012, Erica K. Jacobsen (DOI: 10.1021/ed300347g)
  - Galilean Thermometer Not So Galilean, Peter Loyson (DOI: 10.1021/ed200793g)
  - What Are the "Foundations of Inorganic Chemistry"? Two Answers, Gary P. Wulfsberg (DOI: 10.1021/ed200678u)
- Letters
  - The Misinterpretation of Entropy as "Disorder", Frank L. Lambert (DOI: 10.1021/ed2002708)
  - Falling Enzyme Activity as Temperature Rises: Negative Activation Energy or Denaturation?, Todd P. Silverstein (DOI: 10.1021/ed200497r)
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  - Color My Nanoworld, Adam D. McFarland, Christy L. Haynes, Chad A. Mirkin, Richard P. Van Duyne, Hilary A. Godwin (DOI: 10.1021/ed081p544A)
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- Laboratory Experiments

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  - Evaluating Sustainability: Soap versus Biodiesel Production from Plant Oils, Nicola L. B. Pohl, Jennifer M. Streff, Steve Brokman (DOI: 10.1021/ed100451d)
  - Discovering 13C NMR, 1H NMR, and IR Spectroscopy in the General Chemistry Laboratory through a Sequence of Guided-Inquiry Exercises, H. Darrell Iler, David Justice, Shari Brauer, Amanda Landis (DOI: 10.1021/ed2005664)
- Book & Media Reviews
  - Review of Letters to a Young Chemist, Sarai Flynn, Markel Harris, Luis D. Montes (DOI: 10.1021/ed3003397)
  - Review of A Student's Guide to Data and Error Analysis, Lawton Shaw (DOI: 10.1021/ed300332s)
  - Review of Nature of Science in General Chemistry Textbooks, Thomas A. Holme (DOI: 10.1021/ed300372y)

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- Articles
  - Beer as a Teaching Aid in the Classroom and Laboratory, Jasminka N. Korolija, Jovica V. Plavsic, Dragan Marinkovic, Ljuba M. Mandic
  - The infrared spectra of four isotopes in HCl: A molecular structure experiment, L. Willard Richards
  - The Chemistry of Perfume: A Laboratory Course for Nonscience Majors, Jennifer L. Logan, Craig E. Rumbaugh
- Reports
  - The Environmental Chemistry of Trace Atmospheric Gases, William C. Trogler
  - A Spreadsheet Exercise To Teach the Fourier Transform in FTIR Spectrometry, Brent Shepherd and Michael K. Bellamy
  - QR-Coded Audio Periodic Table of the Elements: A Mobile-Learning Tool, Vasco D. B. Bonifácio
- Letters
  - The Misinterpretation of Entropy as “Disorder”, Frank L. Lambert
  - Retire the Hybrid Atomic Orbital? Not So Fast, Nivaldo J. Tro
    - En réponse à l'article Is It Time To Retire the Hybrid Atomic Orbital? de Alexander Grushow
  - Replace Band Theory in Introductory Chemistry, Stephen J. Hawkes
- Editorials
  - Navigating the Landscape of Assessment, Stacey Lowery Bretz
  - What Do You Do? I Teach Chemistry!, Gregory T. Rushton
  - Improving High School Chemistry Teaching via the “Trickle Up” Effect: A Perspective on the New AP Chemistry Curriculum Framework, Gregory T. Rushton
- Commentaries
  - Hyperconjugation: A More Coherent Approach, Joseph J. Mullins
  - What Are Elements and Compounds?, Rollie J. Myers
  - Summer 2012 Book and Media Recommendations, Cheryl B. Frech, Brian P. Coppola, Hal Harris, and C. M. Woodbridge
- Laboratory Experiments
  - Isolation and Analysis of Essential Oils from Spices, Stephen K. O’Shea, Daniel D. Von Riesen, and Lauren L. Rossi

    - Synthesis of Two Local Anesthetics from Toluene: An Organic Multistep Synthesis in a Project-Oriented Laboratory Course, Patricia Demare and Ignacio Regla
    - Galvanic Cells and the Determination of Equilibrium Constants, Jonathan L. Brosmer and Dennis G. Peters

"classroom activities" les plus populaires des 15 dernières années (1997-2012)

- JCE Classroom Activities Virtual Issue: Celebrating 15 Years with the 15 Greatest Hits, 1997–2012, Erica K. Jacobsen
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- 89 Colorful Lather Printing, S. A. S. Hershberger, M. Nance, A. M. Sarquis, L. M. Hogue
- 105 A Sticky Situation: Chewing Gum and Solubility, I. M. Montes-González, J. A. Cintron-Maldonado, I. E. Párez-Medina, V. Montes-Berríos, S. N. Román-López
- 106 Sequestration of Divalent Metal Ion by Superabsorbent Polymer in Diapers, C. Yueh-Huey, J.-Y. Lin, L.-P. Lin, H. Liang, J.-F. Yaung
- 67 Flame Tests: Which Ion Causes the Color?, M. J. Sanger
- 107 And the Oscar Goes to...A Chemist!, C. R. Howder, K. D. Groen, T. S. Kuntzleman
- 108 Using Archimedes' Principle To Explain Floating and Sinking Cans, M. J. Sanger
- 104 A Novel, Simplified Scheme for Plastics Identification, M. E. Harris, B. Walker
- 109 My Acid Can Beat Up Your Acid!, A. Putti
- 73 Colors in Liquid Crystals, G. Lisensky, E. Boatman
- 103 Enjoy a Hot Drink, Thanks to Chemistry!, G. Pinto, M. T. Oliver-Hoyo, J. A. Llorens-Molina
- 93 Aluminum—Air Battery, M. Tamez, J. H. Yu
- 100 How Heavy Is a Balloon? Using the Ideal Gas Law, B. O. Johnson, H. Van Milligan
- 41 Tick Tock, a Vitamin C Clock, S. W. Wright
- 91 Fluorescent Fun: Using a Homemade Fluorometer, M. F. Wahab

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Articles de Chemistry Education Research and Practice

L'article Influencing the practice of chemistry education Chem. Educ. Res. Pract., 2019, DOI: 10.1039/C9RP90006C (Editorial) de Michael K. Seery propose de nombreux liens d'articles importants en CER (chemical education research) :

Sujet	Citation
Clickers in the classroom	MacArthur and Jones (2008)
Teaching chemical equilibrium	Raviolo and Garritz (2009)
Green chemistry	Andraos and Dicks (2012)
Use of dataloggers	Tortosa (2012)
Transfer of learning	Dori and Sasson (2013)
Chemical triplet (Johnstone's triangle)	Taber (2013)

Sujet	Citation
Learning progressions	Sevian and Talanquer (2014)
Teaching thermodynamics	Bain et al. (2014)
Solutions/electrolytes	de Berg (2014)
Hydrogen bonding	Weinhold and Klein (2014)
Education for sustainable development	Burmeister et al. (2012) Juntunen and Aksela (2014)
Quantum chemistry	Greca and Freire (2014)
Graphical representations of orbitals	Barradas-Solas and Sánchez Gómez (2014) Clauss et al. (2014)
Chemical bonding	Dhindsa and Treagust (2014)
Implicit knowledge	Taber (2014)
Distinguishing abstraction and complexity	Blackie (2014)
Organic chemistry	Graulich (2015)
Capturing student reasoning	Sevian et al. (2015)
Flipped learning	Seery (2015)
Chemical kinetics	Bain and Towns (2016)
Learning difficulties leading to misconceptions	Tümay (2016)
Symbolic expressions in chemistry	Liu and Taber (2016)
Pre-laboratory activities	Agustian and Seery (2017)
Reasoning about structure–property relationships	Talanquer (2018)

La revue propose aussi un accès thématique :

- Celebrating our 2020 Prize and Award winners, 2020
- Learning progressions and teaching sequences in chemistry education, 2018
- Celebrating our 2018 prize and award winners, 2018
- Development of key skills and attributes in chemistry, 2017
- The language and the teaching and learning of chemistry, 2016
- Celebrating the 2016 RSC Prize and Award Winners, 2016
- Teaching And Learning About The Interface Between Chemistry And Biology, 2015
- Physical Chemistry Education, 2014
- The Application of Technology to Enhance Chemistry Education, 2013
- Sustainable Development and Green Chemistry in Chemistry Education, 2012
- Diagnostic Assessment in Chemistry, 2011
- Evidentially-Based Curriculum Development, 2010
- Chemistry Teacher Education – Recent Developments, 2009
- Research and Practice in Chemical Education in Advanced Courses, 2008
- The Laboratory in Science Education: The State of the Art, 2007
- Chemical Education Research in Glasgow in Perspective, 2006
- Chemistry and Environmental Education, 2004
- Teaching Chemistry and Physics, 2003
- Structural Concepts, Part II, 2002
- Structural Concepts: Contributions from Science, Science Education, History and Philosophy of Science, 2001

Advance articles

- …

2022

- Volume 23, 01 January 2022, Issue 1, Page 1 to 275
  - Development of a framework to capture abstraction in physical chemistry problem solving
  - Pre-service chemistry teachers’ use of pedagogical transformation competence to develop topic-specific pedagogical content knowledge for planning to teach acid–base equilibrium
  - The conceptual profile of equilibrium and its contributions to the teaching of chemical equilibrium

2021

- Volume 22, 01 October 2021, Issue 4, Page 803 to 1092
  - Considerations of sample size in chemistry education research: numbers do count but context matters more!
  - Discipline-specific cognitive factors that influence grade 9 students’ performance in chemistry
  - Incorporating concept development activities into a flipped classroom structure: using PhET simulations to put a twist on the flip
  - Examining learning of atomic level ideas about precipitation reactions with a resources framework
  - Student perspectives on chemistry intelligence and their implications for measuring chemistry-specific mindset
  - The impact of representations of chemical bonding on students’ predictions of chemical properties
  - Teaching of experimental design skills: results from a longitudinal study
  - Preservice teachers’ enactment of formative assessment using rubrics in the inquiry-based chemistry laboratory
- Volume 22, 01 July 2021, Issue 3, Page 555 to 801
  - Writing a review article: what to do with my literature review
  - Student success and the high school-university transition: 100 years of chemistry education research
  - The role of visuospatial thinking in students’ predictions of molecular geometry
  - Effects of a context-based approach with prediction–observation–explanation on conceptual understanding of the states of matter, heat and temperature)
  - Creating and testing an activity with interdisciplinary connections: entropy to osmosis
  - Chemistry instructors’ intentions toward developing, teaching, and assessing student representational competence skills - Chemistry Education Research and Practice (RSC Publishing)
  - Effects of different ways of using visualizations on high school students’ electrochemistry conceptual understanding and motivation towards chemistry learning - Chemistry Education Research and Practice (RSC Publishing)
- Volume 22, 01 April 2021, Issue 2, Page 227 to 553
  - The topic-specific nature of experienced chemistry teachers’ pedagogical content knowledge in the topics of interactions between chemical species and states of matter - Chemistry Education Research and Practice (RSC Publishing)
  - Student-generated PowerPoint animations: a study of student teachers’ conceptions of molecular motions through their expressed models - Chemistry Education Research and

    - Practice (RSC Publishing)
    - Development of pre-service teachers' pedagogical content knowledge through a PCK-based school experience course - Chemistry Education Research and Practice (RSC Publishing)
    - South African physical sciences teachers' use of formulae and proportion when answering reaction-based stoichiometry calculation questions - Chemistry Education Research and Practice (RSC Publishing)
    - Examining the sources of high school chemistry teachers' practical knowledge of teaching with practical work: from the teachers' perspective - Chemistry Education Research and Practice (RSC Publishing)
    - Students' understanding of molar concentration - Chemistry Education Research and Practice (RSC Publishing)
- Volume 22, 01 January 2021, Issue 1, Page 1 to 225
    - Implementation of self-regulatory instruction to promote students' achievement and learning strategies in the high school chemistry classroom - Chemistry Education Research and Practice (RSC Publishing)
    - The role of motivation on secondary school students' causal attributions to choose or abandon chemistry - Chemistry Education Research and Practice (RSC Publishing)
    - Does the way charges and transferred electrons are depicted in an oxidation–reduction animation affect students' explanations? - Chemistry Education Research and Practice (RSC Publishing)
    - I realized what I was doing was not working: the influence of explicit teaching of metacognition on students' study strategies in a general chemistry I course - Chemistry Education Research and Practice (RSC Publishing)
    - The persistence of primary school students' initial ideas about acids and bases in the mental models of adults - Chemistry Education Research and Practice (RSC Publishing)
    - Improving students' summative knowledge of introductory chemistry through the forward testing effect: examining the role of retrieval practice quizzing - Chemistry Education Research and Practice (RSC Publishing)
    - Investigating first-year undergraduate chemistry students' reasoning with reaction coordinate diagrams when choosing among particulate-level reaction mechanisms Molly B. Atkinson, Michael Croisant and Stacey Lowery Bretz, Chem. Educ. Res. Pract., 2021
    - Investigating high school chemistry teachers' assessment item generation processes for a solubility lab - Chemistry Education Research and Practice (RSC Publishing)

2020

- Volume 21, 01 October 2020, Issue 4, Page 1015 to 1221
    - Pre-service chemistry teachers' pedagogical content knowledge for integrated STEM development with LESMeR model - Chemistry Education Research and Practice (RSC Publishing)
    - Linking the submicroscopic and symbolic level in physical chemistry: how voluntary simulation-based learning activities foster first-year university students' conceptual understanding - Chemistry Education Research and Practice (RSC Publishing)
    - Examining the effect of lab instructions on students' critical thinking during a chemical inquiry practical - Chemistry Education Research and Practice (RSC Publishing)
- Volume 21, 01 July 2020, Issue 3, Page 687 to 1013
    - Electrolysis: What textbooks don't tell us - Chemistry Education Research and Practice (RSC Publishing)
    - Pre-university students' perceptions about the life cycle of bioplastics and fossil-based

plastics - Chemistry Education Research and Practice (RSC Publishing)
    - Capturing student conceptions of thermodynamics and kinetics using writing - Chemistry Education Research and Practice (RSC Publishing)
    - Video-based instruction on safety rules in the chemistry laboratory: its effect on student achievement - Chemistry Education Research and Practice (RSC Publishing)
    - The impact of coupling assessments on conceptual understanding and connection-making in chemical equilibrium and acid–base chemistry - Chemistry Education Research and Practice (RSC Publishing)
- Volume 21, 01 April 2020, Issue 2, Page 483 to 685
    - Student-generated video in chemistry education - Chemistry Education Research and Practice (RSC Publishing)
    - Increasing chemistry students' knowledge, confidence, and conceptual understanding of pH using a collaborative computer pH simulation - Chemistry Education Research and Practice (RSC Publishing)
    - Development of a measurement instrument to assess students' proficiency levels regarding galvanic cells - Chemistry Education Research and Practice (RSC Publishing)
- Volume 21, Issue 1 page 1 to 482
    - Revisiting the use of concept maps in a large enrollment general chemistry course: implementation and assessment
    - Impact of basic arithmetic skills on success in first-semester general chemistry
    - An examination of pre-service chemistry teachers' meaningful understanding and learning difficulties about aromatic compounds using a systemic assessment questions diagram
    - Developing a lesson plan on conventional and green pesticides in chemistry education – a project of participatory action research
    - Epistemological problems underlying pre-service chemistry teachers' aims to use practical work in school science
    - Secondary school students' chemistry self-concepts: gender and culture, and the impact of chemistry self-concept on learning behaviour
    - Secondary school students' acquisition of science capital in the field of chemistry
    - A teacher perspective on Scrum methodology in secondary chemistry education
    - How to promote chemical literacy? On-line question posing and communicating with scientists
    - Students' competence in translating between different types of chemical representations

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    - South African university students' attitudes towards chemistry learning in a virtually simulated learning environment Mafor Penn and Umesh Ramnarain, Chem. Educ. Res. Pract., 2019,20, 699-709 DOI: 10.1039/C9RP00014C

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  - Effect of practicum courses on pre-service teachers' beliefs towards chemistry teaching: a year-long case study Yezdan Boz, Betul Ekiz-Kiran and Elif Selcan Kutucu, Chem. Educ. Res. Pract., 2019,20, 509-521 DOI: 10.1039/C9RP00022D
  - Designing play-based learning chemistry activities in the preschool environment Karina Adbo and Clara Vidal Carulla, Chem. Educ. Res. Pract., 2019, 20, 542-553 DOI: 10.1039/C8RP00306H
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